Certificate of Acceptance

OFFICIAL
PA05/07792

Manufacturer:
RailSense Solution Ltd

Issue : 1
Valid From : 12-05-2023
Monitoring Period : 12 Months

VoidSense Combined Track Void and Rail Temperature Remote Monitoring Device

Product Description

VoidSense from RailSense is a void meter (RTVMD) and track temperature monitor. It is designed to be installed on a rail network track to monitor both temperature and movement of the rail, allowing under-track voids to be detected remotely and before occurrence of failure.

The VoidSense measures with high degree of accuracy.

- Replaces mechanical void measurement devices,
- Avoids staff on track to take and record temperature and/or void,
- Monitors track temperature -20 to +80C in real time-lapsed coupled with alarm condition,
- Allows operators to intelligently manage line speeds keeping the network reliable, open and safe for passengers,
- Product works in accordance with NR/L2/TRK/1054,
- Works on all NR line speed and tonnage.

Product Image

Full Acceptance

VoidSense manufactured by RailSense Solution Ltd. To be used to remotely monitor track voiding and rail temperatures in Plain line, Switches and Crossings (outside of the moving parts) on the Network Rail Infrastructure.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Reviewed by:

Aamir Malik
Product Acceptance Coordinator

Authorised by:

Stephen Franklin
Network Technical Head [S&C]

Please contact prodacc@networkrail.co.uk

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Specific Conditions

The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section. Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.

Manufacturer

1) Provide the appropriate instructions and guidance to allow users to install, maintain and use the system, including restrictions on positioning. E.g. around moving parts, AMS crossings or near axle counters. (English reading documents)

2) Facilitate suitable training for Installation, Inspection and Maintenance.

3) Ensure that all products approved on this certificate comply with the product configuration and assessed documentation sections of this certificate.

4) Notify the Network Rail Product Acceptance team, quoting the certificate PA reference number, via prodacc@networkrail.co.uk : a. Within 48 hours of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed). b. Of any intended change to the accepted product; changes include:
    i. a change to the product configuration (to the actual product or its application)
    ii. a variation to or addition of manufacturing locations or processes.
    iii. a change in the name or ownership of the manufacturing company.
    iv. any changes to the ability or intention to support technical services, spares or repairs.
    v. any variation from specification or manufacturing drawings.

5) Provide the Network Rail Product Acceptance team, quoting the certificate PA reference number, via prodacc@networkrail.co.uk with at least 12 (twelve) months' notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to the Network Rail Technology Introduction Group.

User

1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Technology Introduction Group

2) Check that the application of use complies with the scope of acceptance.

3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Technology Introduction Group.

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4) Inform the Network Rail Product Acceptance team, quoting the certificate PA reference number, via prodacc@networkrail.co.uk in writing of a change to the product configuration (or to the actual product or its application).

5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.

6) Be appropriately trained and authorised for the installation, maintenance and use of the product.

7) Only send products for calibration, repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.

Product Configuration

System or Complete Assembly

Part No.	Description	Catalogue No.
S0004	VoidSense Plain Rail System (standard baseplate) – consists of V0009, V0002, V0003, V0005, V0011, V0012, V0016	0057/024906
S0002	VoidSense Switchings and Crossings Rail System (extended baseplate) – consists of V0009, V0002, V0004, V0005, V0011, V0012, V0016	0057/024907

Hardware (Maintenance Spares and Line Replaceable Units)

Part No.	Description	Catalogue No.
V0013	Allen key set	0057/024908
V0008	VoidSense Transit case - standard baseplate	0057/024909
V0018	VoidSense Transit case - extended baseplate	0057/024910
V0005	Communication & Receiver Hub Unit (RailSense Mk2 Communications Hub with LTE2G/4G.)	0057/024911
V0009	Linear Sensor Assembly	0057/024912
V0002	Temperature Sensor Assembly	0057/024913
V0006	Torque Wrench Uncalibrated, 8mm Hex adaptor	0057/024914
V0007	Torque Wrench Calibrated, 8mm Hex adaptor	0057/024915
V0014	Baseplate fixings kit	0057/024916
V0016	Temperature Clip Assembly	0057/024917
V0017	VoidSense Hub Unit isolation kit	0057/024918
V0019	Baseplate clamp (fixed)	0057/024919

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Part No.	Description	Catalogue No.
V0020	Baseplate clamp (adjustable)	0057/024920
V0003	Baseplate Assembly - standard length	0057/024921
V0004	Baseplate Assembly - extended length	0057/024922
V0011	Transit Link	0057/024923
V0012	Charging Cable	0057/024924

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
GIRT/7073	Requirements for the position of infrastructure and for defining and maintaining clearances		02/06/2018	1
GMRT/2173	Size of vehicles and position of equipment		04/06/2022	1
DFR Check sheet	H12 [HO] A4 colour (1pg) assessment 201009	V5.1	12/05/2023	1
DFR DRACAS	DRACAS Data	1	12/05/2023	1
DFR VoidSense User Instructions	6000-41-01_ISS5_installation_instructions. Pdf	1	12/05/2023	1
DFR VoidSense User Instructions	6000-41-02 Web_interface_user_manual.pdf	1	12/05/2023	1
DFR VoidSense User Instructions	Installation Block Diagram	1	12/05/2023	1
VoidSense Triur Case Study	Triur Case Study.pdf	1	12/05/2023	1
DFR VoidSense Specification	6000-48-01 VoidSense Requirements	2.0	12/05/2023	1
DFR VoidSense Reliability Calcs	MTTF Calc & VoidSense Reliability Calculations	1	12/05/2023	1
DFR RAM Assessment	6000-46-01_ISSD_RAM Assessment Document	1	12/05/2023	1
DFR PA Trial	07648 – Trial Certificate – VoidSense	1	29/11/2022	T1
DFR PA Trial	6000-52-08 Bawtry Installation	1	12/05/2023	1
DFR VoidSense P Diagram	6000-32-02 VoidSense P Diagram	A	12/05/2023	1
DFR VoidSense Gauge R&R Study	Measuring Gauge R&R Study Results	1	12/05/2023	1
DFR VoidSense Gauge R&R Study	6000-46-05 VoidSense Temperature Sensor Chamber Tests	1	12/05/2023	1
DFR VoidSense Gauge R&R Study	VoidSense Temperature Sensor Gauge R&R Study Results	1	12/05/2023	1
DFR VoidSense Gauge R&R Study	VoidSense Gauge R&R Study Results	1	12/05/2023	1
DFR VoidSense FMEA Block Diagram	6000-32-01 – VM1 – FMEA	B	12/05/2023	1

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Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
DFR Technical Resport Shock & Vibration	6000-46-02 Network Rail VoidSense Bawtry Trial Accelerometer Measurements	3	12/05/2023	1
Network Rail RTVMD Requirements Spec	Technical Requirements for RTVMN Draft	-		1
DFR Mechanical Measurements	Mechanical Measurements & FW VoidSense and Manual Voidmeter Comparison.msg	-		1

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
6000-41-01	Installation instructions	5.0	17/10/2022	1

Certificate History

Issue	Date	Issue History
1	12/05/2023	First accepted for use.

Contact Details

Manufacturer

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General Terms & Conditions

1) General
1) This certificate can only be amended by Network Rail Product Acceptance, the relevant Network Technical Head or nominated delegate. Any alterations made by a other persons will invalidate the entire certificate.
2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
3) Upon the review date this certificate and the product it relates to is invalid and not accepted for use. Manufacturers are to make an application for a review prior to the review date via the NR sponsoring applicant.

2) Manufacturer
The Manufacturer shall:
1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Network Rail Design for Reliability Standard (DFR) NR-L2-RSE-0005 and in any deed of warranty for the relevant certificate number.
2) Notify Network Rail Product Acceptance in writing (email prodacc@networkrail.co.uk):
a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
b. Of any intended change to the accepted product; changes include:
i. a change to the product configuration (to the actual product or its application);
ii. a variation to or addition of manufacturing locations or processes;
iii. a change in the name or ownership of the manufacturing company;
iv. any changes to the ability or intention to support with technical services, spares or repairs.
3) The Manufacturer shall provide Network Rail Product Acceptance or National Supply Chain (NSC) at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to Network Rail Product Acceptance.
4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
8) In accordance with Network Rail's Quality Assurance Policy Statement, where the specification and/or Product Acceptance Certificates specify quality assurance classifications for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

3) Conditions of Use
Specifiers, installers, operators, maintainers, etc. using the product shall:
1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Product Acceptance.
2) Check that the application of use complies with the relevant certificate's scope of acceptance.
3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Product Acceptance.
4) Inform Network Rail Product Acceptance in writing of a change to the product configuration (or to the actual product or its application).
5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
8) Users are to be aware that Product Acceptance is not a substitute for design approval.

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4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsoring applicant shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations

2) As required in Railway Group Standard RIS-8270-RST, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:

a. All rail vehicle types that have access rights over the area affected by the change

b. Infrastructure managed by others

c. Neighbours.

Railway Interoperability Regulations

3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.

4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail and Road) is required before the equipment is to be used in revenue earning service.

5) Supply Chain Arrangements

1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.

2) Products may be purchased by Network Rail or its agents, suppliers or contractors.

3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers.